Pandemic Simulation

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With additional content provided by:

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and

The Network of Schools of Public Policy, Affairs, and Administration (NASPAA)
Overview

I. Instructional View and Preparation
II. Gameplay
III. Educational Objectives, Evaluation and Assessment
IV. Example -- Post Simulation Exercise
Why Simulations?

Robust body of literature suggests efficacy of learning through computer based simulations

Linked to increased confidence and competence in the workforce

Application to practice
Preparation

- From 2 to 20 players (I have run simultaneous games to accommodate bigger classes)
- Class debrief suggested about one hour prep time was sufficient
  - Batten voice over PowerPoint / Student manual
  - Passed out materials / assigned readings
  - Discussed cabinet roles & policy options
  - Demonstrated simulation interface, run time
- Assigning Groups
  - Game Code, Country, Cabinet positions (names), and Position description
- On Campus or Online
Pandemic Simulation

• An interactive, stochastic, and continuous game spanning 175 days in accelerated time
• Participants forecast and commit to difficult public policy decisions on behalf of their country
  • Participants have limited information
  • Their decisions affect health and mortality, politics, and the economy
• Ideally, participants interact and negotiate with other countries
Five Broad Policy Options

• Social distancing,
• Travel restrictions within the country,
• Travel restrictions outside of the country,
• Distribution, and
• Revenue Generation
Policies and Policy Trade offs

• Based off of policies that were enacted or proposed in past epidemics and in preparedness reports

• Impacts based on data collected in scientific studies, surveys, and reports

• Policies don’t always do what you’d expect:
  • Closing schools
    • Can backfire, harm economy
  • Quarantine
    • Expensive and not always effective

• Vaccines
  • Seasonal vaccines don’t protect against new strains
  • Not all vaccines develop effectively

• Gloves, masks, and hand sanitizer
  • The flu virus can survive longer on gloves than on skin
  • Viruses are small enough to go through most masks
  • Distributing hand sanitizer can cause a condition of Risk Compensation
Epidemic Course +/- 5%

- 1,753 Cumulative Mortality per 100,000 population
- 1.75% Portion of Population Who Have Died So Far
- 116,383,666 - 14,500,000 Amount of budget remaining

News Feed:
- Comcast and Verizon explore possible merger reducing consumer choice yet again.
- Retailer WallMart shuts 200 stores. Local stores make a come back.
- Grogan business school ranked the best in the region.
- Artificial Intelligence can now predict what snacks you prefer.
- Rock band Fish announces 14 night run at the Monroe Quadratical Yard.
- Solar Energy investments up region-wide.
Educational Objectives

• **Cooperation and Consensus Building**: issues like pandemics are global and cannot be solved by a single country; teams with conflicting interests must cooperate to resolve the situation.

• **Crisis Management**: participants must learn to make effective decisions while the clock ticks down.

• **Solving Complex Problems**: simple solutions or simplistic thinking cannot capture the complexity of a policy issue.

• **Critical Analysis of Data**: participants are required to make decisions with limited information.

• **Public Health Policy**: give participants a sense of the concerns and what tools are available.

• **Interdisciplinary Approach**: public policy and science should complement one another.
Assessment

• Ways to Assess
  • Direct observation of student performance
  • Group presentation
  • Reflective paper / journal entries / policy brief / policy analysis
  • Peer evaluation of student performance
  • Pre and post survey questionnaire

• NASPAA Universal Competencies and Program Mission Specific Goals
NASPAA Competencies

• Lead and Manage in Public Governance;
• Participate in and contribute to the public policy process;
• Analyze, synthesize, think creatively, solve problems, and make decisions;
• Articulate and apply public service perspectives; and
• Communicate and interact productively with a diverse and changing workforce and citizenry
Policy Analysis Assignment

• Defining the Problem
• Establishing Evaluative Criteria
  • Technical feasibility/ Economic feasibility / Political viability / Administrative viability / Legal and ethics
• Developing, Comparing and Selecting Alternatives
• Evaluating Efficacy of Policy Proposals